

SEQUENCE LISTING

<110> Pavan, William J.
Loftus, Stacie K.
The Government of the United States of America
as represented by The Secretary of the
Department of Health and Human Services

<120> Alteration of RAB38 Function to Modulate Mammalian
Pigmentation

<130> 015280-148100PC

<140> WO PCT/US03/01622

<141> 2003-01-17

<150> US 60/349,929

<151> 2002-01-18

<160> 28

<170> PatentIn Ver. 2.1

<210> 1

<211> 8

<212> DNA

<213> Mus musculus

<220>

<223> Rab38 sequence of wildtype allele in C57Bl6/J +/+
DNA

<400> 1
ctgggtgt 8

<210> 2

<211> 8

<212> DNA

<213> Mus musculus

<220>

<223> Rab38 sequence of chocolate (cht) mutant allele in
c57Bl6/J Rab38cht/+ DNA

<400> 2
ctggktgt 8

<210> 3

<211> 34

<212> PRT

<213> Homo sapiens

<220>

<223> human RAB38 highly conserved N-terminal region

<400> 3
Met Gln Ala Pro His Lys Glu His Leu Tyr Lys Leu Leu Val Ile Gly
1 5 10 15

Asp Leu Gly Val Gly Lys Thr Ser Ile Ile Lys Arg Tyr Val His Gln
 20 25 30

Asn Phe

<210> 4
 <211> 34
 <212> PRT
 <213> Rattus norvegicus

<220>
 <223> rat RAB38 highly conserved N-terminal region

<400> 4
 Met Gln Thr Pro His Lys Glu His Leu Tyr Lys Leu Leu Val Ile Gly
 1 5 10 15

Asp Leu Gly Val Gly Lys Thr Ser Ile Ile Lys Arg Tyr Val His Gln
 20 25 30

Asn Phe

<210> 5
 <211> 34
 <212> PRT
 <213> Mus musculus

<220>
 <223> mouse RAB38 highly conserved N-terminal region

<400> 5
 Met Gln Thr Pro His Lys Glu His Leu Tyr Lys Leu Leu Val Ile Gly
 1 5 10 15

Asp Leu Gly Val Gly Lys Thr Ser Ile Ile Lys Arg Tyr Val His Gln
 20 25 30

Asn Phe

<210> 6
 <211> 47
 <212> PRT
 <213> Homo sapiens

<220>
 <223> human RAB3a N-terminal region

<400> 6
 Met Ala Ser Ala Thr Asp Ser Arg Tyr Gly Gln Lys Glu Ser Ser Asp
 1 5 10 15

Gln Asn Phe Asp Tyr Met Phe Lys Ile Leu Ile Ile Gly Asn Ser Ser
 20 25 30

Val Gly Lys Thr Ser Phe Leu Phe Arg Tyr Ala Asp Asp Ser Phe
 35 40 45

<210> 7
 <211> 45
 <212> PRT
 <213> Homo sapiens

<220>
 <223> human RAB5 N-terminal region

<400> 7
 Met Ala Ser Arg Gly Ala Thr Arg Pro Asn Gly Pro Asn Thr Gly Asn
 1 5 10 15
 Lys Ile Cys Gln Phe Lys Leu Val Leu Leu Gly Glu Ser Ala Val Gly
 20 25 30
 Lys Ser Ser Leu Val Leu Arg Phe Val Lys Gly Gln Phe
 35 40 45

<210> 8
 <211> 28
 <212> PRT
 <213> Homo sapiens

<220>
 <223> human N-RAS N-terminal region

<400> 8
 Met Thr Glu Tyr Lys Leu Val Val Val Gly Ala Gly Gly Val Gly Lys
 1 5 10 15
 Ser Ala Leu Thr Ile Gln Leu Ile Gln Asn His Phe
 20 25

<210> 9
 <211> 1439
 <212> DNA
 <213> Homo sapiens

<220>
 <223> Rab38 cDNA

<400> 9
 acatagagct ccgggaaacg tcggtgcccc gccccggctg tgcttcccag agcaagctcc 60
 aggctccgca agaccgcgag gcctccagga tgcagacacc tcacaaggag cacctgtaca 120
 agctgctggt gatcggcgac ctgggtgtgg gcaagaccag cattatcaag cgctatgtgc 180
 accaaaactt ctccctcgac taccgggcca ccattggtgt ggacttcgag ctgaagggtgc 240
 tccactggga cccagagacg gtggtgagct tgcagctctg ggacattgct ggtcaagaaa 300
 gatttggaag catgacaaga gtttattacc gggaagctat gggggcattt attgtttttg 360
 atgtcaccag accagccaca tttgaagccg tggcaaagtg gaaaaatgat ttggactcaa 420
 agttaacgct ccctaattgt aagccagtgt cagtgggtct gttggccaac aaatgtgacc 480
 aaggggaagga tgtgcttatg aacaatggac tcaagatgga ccagttctgc aaggagcatg 540
 gcttcgtagg atggtttgaa acatcagcca aggaaaacat aaacattgat gaagcctcaa 600
 gatgcctggt caagcacata cttgcaaatg agtgtgacct cctagagtct atagaaccgg 660
 acattgtgaa gcccatctc acatcgcccc aggttgctcag ctgctctggc tgtgccaaat 720
 cctagaaggc tcctctgctg gcatatgaca gacagaacct gtggccctca tgaatcgtgc 780
 ttcagttttt ccttattacc attttgggta agcgtcagga tagggaagca catgtgacaa 840
 gccaaagata catgactgta tggttcctgt caaagaggaa cagcaaagt tctttatgtg 900
 ttttcccacc ccatacagac agtggtttaca agcttttaaa atattagtct gtcacaatat 960
 gctgttttat cattgagcaa agccactcag ggacacagac agccctaata tttgttcctt 1020

| | | | | | | | | | | | | |
|-----|---------|-----|---------|-------|---------|------|---------|------|---------|------|---------|------|
| taa | atcaaca | aag | gcttctg | gtc | ttcttga | gaag | ggggaat | aac | agagcaa | ggc | agaggtc | 1080 |
| aag | ctaagt | tgg | gatttg | tct | tgcctg | gtg | tgctctt | gtt | caggtat | caat | ttgttc | 1140 |
| ccg | gtggtc | tga | taggtc | atta | aataga | aac | cattcat | ggt | agaccta | agg | gttgkct | 1200 |
| gtg | atgtttc | tct | tcaag | cgt | gtgcaca | ggc | agcctgg | gct | tttggtg | tcac | ttgctg | 1260 |
| tgc | cctgaat | gct | ggtttaa | ctg | aaaactg | tat | ggaaaga | tct | gctccct | gtat | gtgcct | 1320 |
| ttc | tttcagc | ttc | ctctgac | tca | agctgca | ggac | tcttct | gtat | gtggaa | gata | tattat | 1380 |
| ata | tattttt | cac | aagtga | aaata | aaaaca | tta | aaaatgc | tgt | ttccctg | ttt | ctgata | 1439 |

<210> 10

<211> 291

<212> DNA

<213> Homo sapiens

<220>

<223> Rab38 exon 1 and surrounding intron sequence

<400> 10

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| aca | tagagct | ccg | ggaacg | tcg | gtgccca | gccc | gggctg | tgt | ttcccag | agc | aagctcc | 60 |
| agg | ctccgca | agac | ccgcgg | gcct | ccagga | tgc | agacacc | tcac | aaggag | cac | ctgtaca | 120 |
| agc | tgctggt | gat | cggcgac | ctg | gggtgtg | gca | agaccag | catt | atcaag | cg | tatgtgc | 180 |
| acc | aaaactt | ctc | ctcgac | tac | cgggccca | ccat | tggtgt | ggac | ttcgcg | ctg | aaggtgc | 240 |
| tcc | actggga | ccc | agagacg | gtg | gtgcgct | tgc | agctctg | ggac | attgct | g | | 291 |

<210> 11

<211> 282

<212> DNA

<213> Homo sapiens

<220>

<223> Rab38 exon 2

<400> 11

| | | | | | | | | | | | | |
|------|---------|------|--------|------|---------|------|---------|------|---------|------|---------|-----|
| ggt | caagaaa | gatt | tggaaa | cat | gacaaga | gttt | attacc | ggga | aagctat | gggg | gcattt | 60 |
| att | gtttttg | atgt | caccag | acc | agccaca | ttt | gaagccg | tgg | caaagt | gaaa | aatgat | 120 |
| ttg | gactcaa | agtt | aacgct | ccct | aatgg | aag | ccagtgt | cag | tggttct | gtt | ggccaac | 180 |
| aaat | gtgacc | aagg | gaagga | tgt | gcttatg | aaca | atggac | tca | agatgga | ccag | ttctgc | 240 |
| aagg | agcatg | gctt | cgtagg | atgg | tttgaa | acat | cagcca | ag | | | | 282 |

<210> 12

<211> 869

<212> DNA

<213> Homo sapiens

<220>

<223> Rab38 exon 3 and surrounding intron sequence

<400> 12

| | | | | | | | | | | | | |
|------|---------|-------|---------|-------|----------|-------|---------|------|---------|-------|----------|-----|
| agg | aaaacat | aaac | attgat | gaag | cctcaa | gat | gcctggt | caag | cacata | ctt | gcaaatg | 60 |
| agt | gtgacct | ccta | gagtct | ataga | accgg | acatt | gtgaa | gccc | atctc | acat | cgccca | 120 |
| agg | ttgtcag | ctg | ctctggc | tgt | gccaaat | ccta | gaaggc | tcct | ctgctg | gcata | tgcaca | 180 |
| gac | agaaccc | gtg | gcctca | tga | atcgtgc | ttc | agttttt | cctt | attacc | at | tttgggta | 240 |
| agc | gtcagga | tag | ggaagca | cat | gtgacaa | gcc | aaagata | cat | gactgta | tgg | ttcctgt | 300 |
| caa | agaggaa | cag | caaagt | tct | tttatgtg | tttt | cccacc | ccat | cagcac | agt | gtttaca | 360 |
| agc | ttttaaa | atatt | agtct | gtc | acaatat | gct | gttttat | catt | gagcaa | agcc | actcag | 420 |
| ggac | acagac | agcc | ctaata | ttt | gttcctt | taa | atcaaca | aagg | cttctg | gtct | tcttga | 480 |
| gaag | ggggaat | aac | agagcaa | ggc | agaggtc | aag | ctaagt | tggg | gatttg | tctt | gcctg | 540 |
| gtg | tgctctt | gtt | caggtat | caat | ttgttc | ccg | gtgggtc | tga | taggtct | atta | aataga | 600 |
| aacc | attcat | ggt | agaccta | agg | gttgkct | gtg | atgtttc | tctt | cagagt | cgt | gtgcaca | 660 |

ggcagcctgg gcttttgttg tcacttgctg tgccctgaat gctggtttaa ctgaaaactg 720
 tatggaaaga tctgctccct gtatgtgcct ttctttcagc ttcctctgac tcaagctgca 780
 ggactcttct gtatgtggaa gatataattat atatattttt cacaagtgaa aaataaaaaca 840
 ttaaaaatgc tgtttcctg tttctgata 869

<210> 13
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:TYRP15'T3F

<400> 13
 gcgcgaatta accctcacta aagggtctga gcacccctgt cttct 45

<210> 14
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:TYRP15'T7R

<400> 14
 gcgcgtaata cgactcacta tagggcccag ttgcaaaatt ccagt 45

<210> 15
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:MLSN R T7

<400> 15
 gcgggtaata cgactcacta taggggccac aaacatgtcc tacttac 47

<210> 16
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:MLSN FT3

<400> 16
 gcgcgaatta accctcacta aagggaagct tccggactct ctac 44

<210> 17
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex1F

 <400> 17
 taggaaggag gattaaaccc g 21

 <210> 18
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex 1R

 <400> 18
 gaactcctca tggctcactc c 21

 <210> 19
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex2F

 <400> 19
 ggatatgaag ctccagtgtgta gtgtac 26

 <210> 20
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex2R

 <400> 20
 cactggacag aaacattatt gtcac 25

 <210> 21
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex3F

 <400> 21
 aagttatcag ccagtgagat actgtg 26

<210> 22
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex3R

 <400> 22
 cacatgtggt atatctatcc tgacg 25

 <210> 23
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:amplification
 primer cht Ex1F

 <400> 23
 ggcctccagg atgcagacac c 21

 <210> 24
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:amplification
 primer cht Ex1R

 <400> 24
 ccagcaatgt cccagagctg c 21

 <210> 25
 <211> 49
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification att site linker primer AttB1-RRab

 <400> 25
 ggggacaagt ttgtacaaaa aagcaggctc catgcagaca cctcacaag 49

 <210> 26
 <211> 51
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification att site linker primer
 AttB2-RRab-STP

<400> 26
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<210> 27
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:oligonucleotide
 complementary to segment of RAB38 mRNA translation
 initiation codon

<400> 27
 aacgttgagg ggcac 15

<210> 28
 <211> 1412
 <212> DNA
 <213> Homo sapiens

<220>
 <223> human RAB38 DNA sequence

<400> 28
 ggctgcgctt ccctggtcag gcacggcacg tctggccggc cgccaggatg caggccccgc 60
 acaaggagca cctgtacaag ttgctgggtga ttggcgacct gggcgtgggg aagaccagta 120
 tcatcaagcg ctacgtgcac cagaacttct cctcgcaacta ccgggccaca atcggcgtgg 180
 acttcgcgct caaggtgctc cactgggacc cggagactgt ggtgcgcctg cagctctggg 240
 atatcgacagg tcaagaaaga tttggaaaca tgacgaggggt ctattaccga gaagctatgg 300
 gtgcatttat tgtcttcgat gtcaccaggc cagccacatt tgaagcagtg gcaaagtggg 360
 aaaatgattt ggactccaag ttaagtctcc ctaatggcaa accggtttca gtgggtttgt 420
 tggccaacaa atgtgaccag ggggaaggatg tgctcatgaa caatggcctc aagatggacc 480
 agttctgcaa ggagcacggg ttcgtaggat ggtttgaaac atcagcaaag gaaaatataa 540
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